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10/823,311	04/13/2004	Che-Hsiung Hsu	UC0423USNA	4769

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/823,311	Applicant(s) HSU ET AL.	
	Examiner Marie R. Yamnitzky	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This Office action is in response to applicant's amendment filed April 26, 2007, which amends claims 9-11 and 17.

Claims 1-19 are pending.

2. The claims remain subject to an election of species requirement. Claims 1-12 and 16-18 continue to read on the elected species, with claims 3-5 and 9-12 being interpreted as further defining one of several materials that may be used, but not as requiring the material that is further defined.

3. Claims 13-15 and 19 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 19, 2006. Withdrawn species claims will be subject to further consideration upon allowance of a generic or linking claim.

4. The rejection of claim 17 under 35 U.S.C. 112, 2nd paragraph, as set forth in the Office action mailed October 17, 2006 is overcome by claim amendment.

The rejection of claims 3-5 under 35 U.S.C. 112, 2nd paragraph, as set forth in the October 17th action is withdrawn. Since the term "about" allows for variation, the examiner will interpret the phrase "n is at least about 4" as encompassing values for the variable "n" that are less than 4.

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5. Claim 17 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Claim 17 depends from claim 16 and also references claim 1. However, the examiner notes that the reference to claim 1 is superfluous since claim 16 depends from claim 1. This objection could be overcome by deleting "of Claim 1" from the second line of claim 17.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-12 stand rejected under 35 U.S.C. 102(b) as being anticipated by C.-H. Hsu in *Synthetic Metals*, 41-43 (1991), pp. 671-674, for reasons of record in the Office action mailed October 17, 2006.

8. Claims 1-12 and 16-18 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ohtani et al. (US 4,869,979), for reasons of record in the Office action mailed October 17, 2006.

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9. Claims 1-12 and 16-18 stand rejected under 35 U.S.C. 102(e) as being anticipated by Kokonaski et al. (US 2004/0217877 A1), for reasons of record in the Office action mailed October 17, 2006.

10. Claims 1-12 and 16-18 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hsu et al. (US 2004/0102577 A1), for reasons of record in the Office action mailed October 17, 2006.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 16-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over C.-H. Hsu in *Synthetic Metals*, 41-43 (1991), pp. 671-674, for reasons of record in the Office action mailed October 17, 2006.

13. Applicant's arguments filed April 26, 2007 have been fully considered but they are not persuasive with respect to any of the prior art rejections.

The present claim language is open, both with respect to the structure of the claimed composite, and with respect to the composition of the recited first layer and the composition of the recited second layer. The claimed composite may comprise components/layers in addition to

the recited first and second layers. The first layer may comprise components in addition to the recited doped conductive polymer. The second layer may comprise components in addition to the recited acid or salt. The present claim language does not exclude components of the second layer from the first layer, and vice versa.

With respect to the rejections under 35 U.S.C. 102(b) and 103(a) based on the *Synthetic Metals* article by Hsu, applicant argues that Hsu does not disclose a bilayer composite as required by the claims. Applicant argues that Hsu's composite material has diffusion of the polymer within the film so the two layers are not distinct. As noted at the top of page 673 of the article, polyaniline forms on the surface of the Nafion® film and to a certain depth in the body of the film, but not through the entire thickness of the film. The present claim language is open and does not exclude diffusion of one or more components of the first layer into the second layer and/or does not exclude diffusion of one or more components of the second layer into the first layer.

With respect to the rejection based on the patent to Ohtani et al., applicant argues that Ohtani does not disclose a bi-layer composite and requires a third component not present in the present claims. Ohtani discloses the two layers required by the present claims. Additional layers disclosed and/or required by Ohtani are not excluded by the present claim language.

With respect to the rejection based on the published application of Kokonaski et al., applicant argues that the prior art disclosure pertaining to electrochromic cells does not teach that the conductive polymers are doped and does not teach a bi-layer composite as recited in the present claims. Applicant further argues that in the prior art embodiment of an electrochemical

transistor, the conductive polymers are not explicitly doped. The examiner respectfully disagrees. In particular, for both embodiments, Kokonaski teaches PEDOT:PSS for the conductive polymer. PEDOT:PSS is a doped conductive polymer, with PSS being the dopant. (Note the teachings at page 8, line 31- p. 9, l. 22 of the present specification.) Kokonaski teaches a composite comprising the first and second layers required by the present claims.

With respect to the rejection based on the published application of Hsu et al., applicant argues that while Hsu teaches application of the buffer layer in multiple thin layers, the thin buffer layers are the same material and therefore not distinct layers. Applicant further argues that while the buffer layer may be overcoated with a conductive polymer as taught in paragraph [0090], the conductive polymers are similar to the buffer layer and are not identical or equivalent to the second layer of the present claims. Since the present claim language is open with respect to the composition of the first and second layers, first and second layers that have the same composition are not excluded. Further, of the conductive polymers taught in paragraph [0090], at least Hsu's "polydioxithiophene/polystyrene-sulfonic acid" meets the limitations of the presently recited "doped conductive polymer", and Hsu's "polyaniline-polymeric-acid-colloids" meets the limitations of the presently recited "colloid-forming polymeric acid". Accordingly, even if the present claims were to require the claimed composite to have two distinct layers in which the compositions of the first and second layer are different, composites formed according to paragraph [0090] by overcoating Hsu's buffer layer with a layer of polydioxithiophene/polystyrene-sulfonic acid or overcoated with a layer of polyaniline-polymeric-acid-colloids would still meet the claim limitations.

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14. Miscellaneous:

As noted in the previous Office action, "alkythio" should read --alkylthio-- in claims 3-5, and --from-- should be inserted after "selected" in line 1 of claim 18.

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
June 14, 2007



MARIE YAMNITZKY
PRIMARY EXAMINER

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